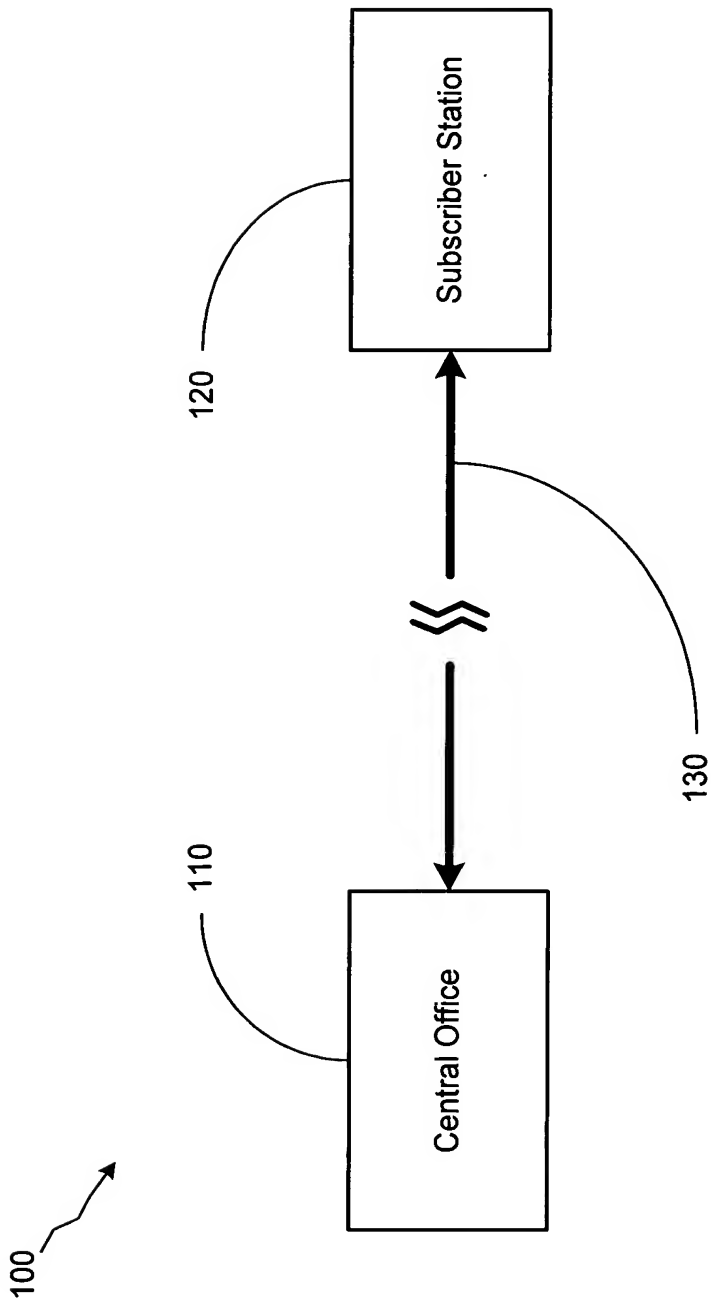


FIGURE 1

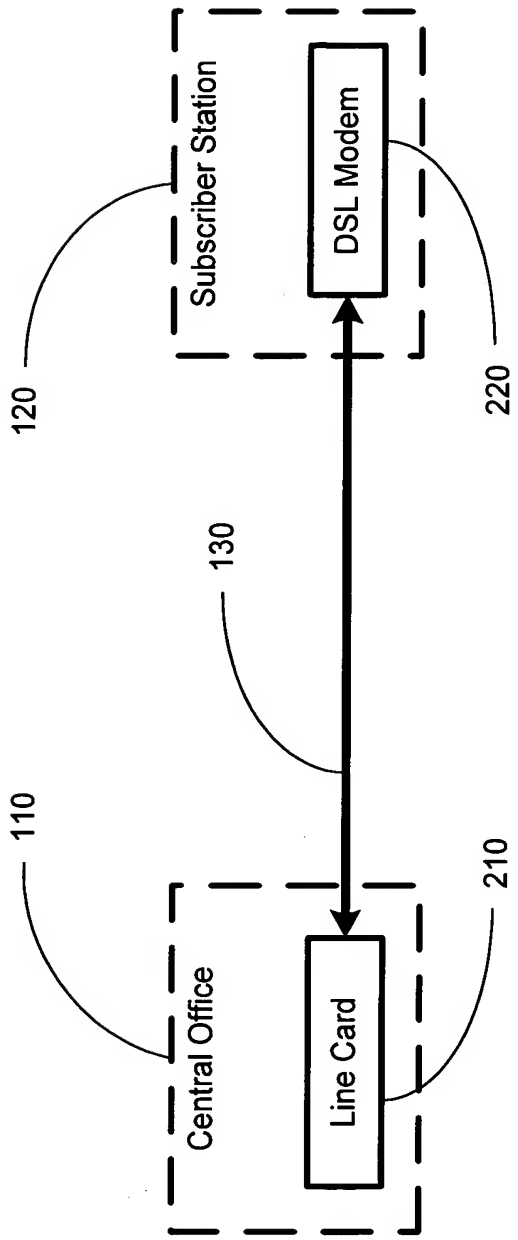
Subscriber Station
DSL Modem
120
220
130
110
Central Office
Line Card
210

FIGURE 2

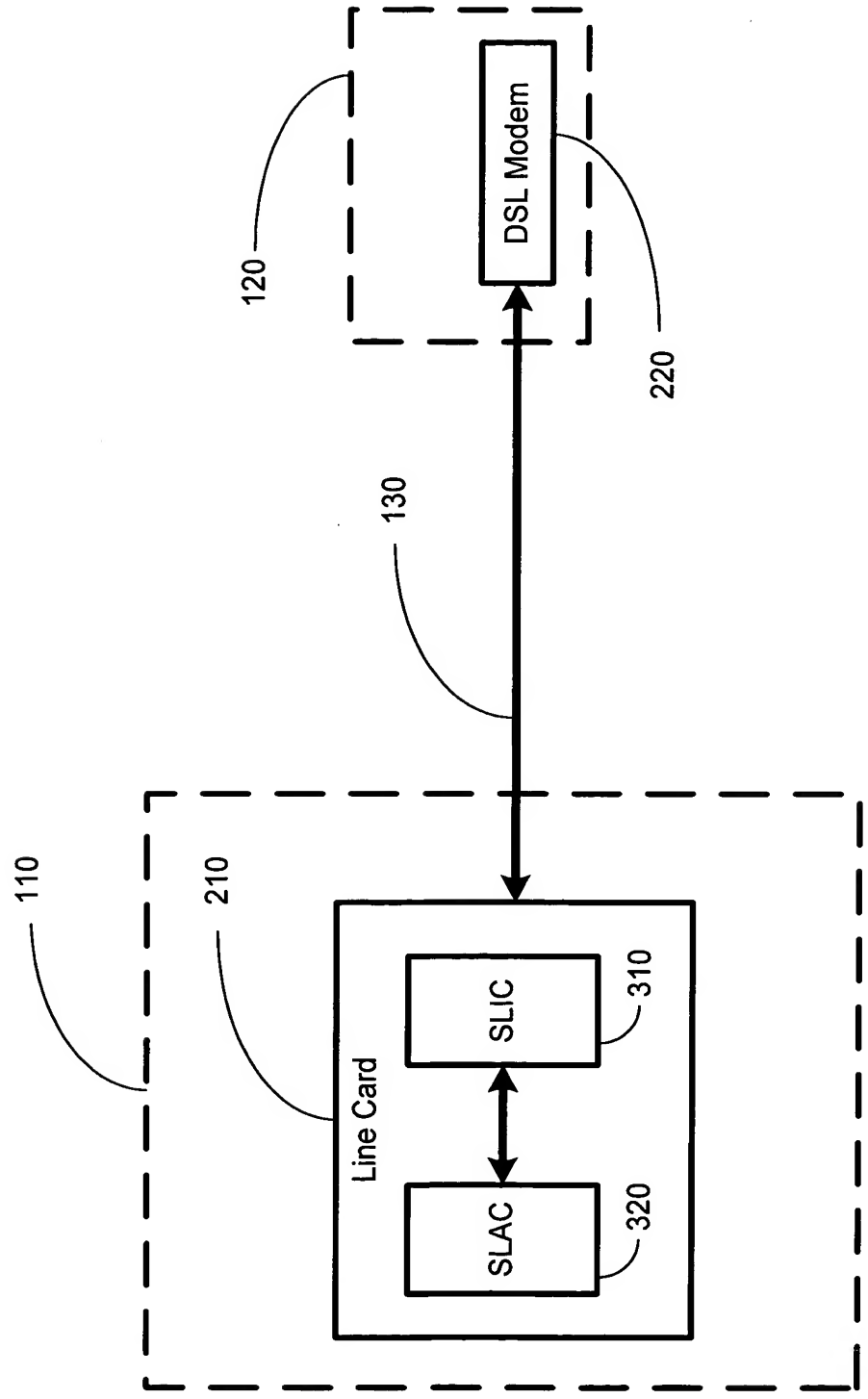


FIGURE 3

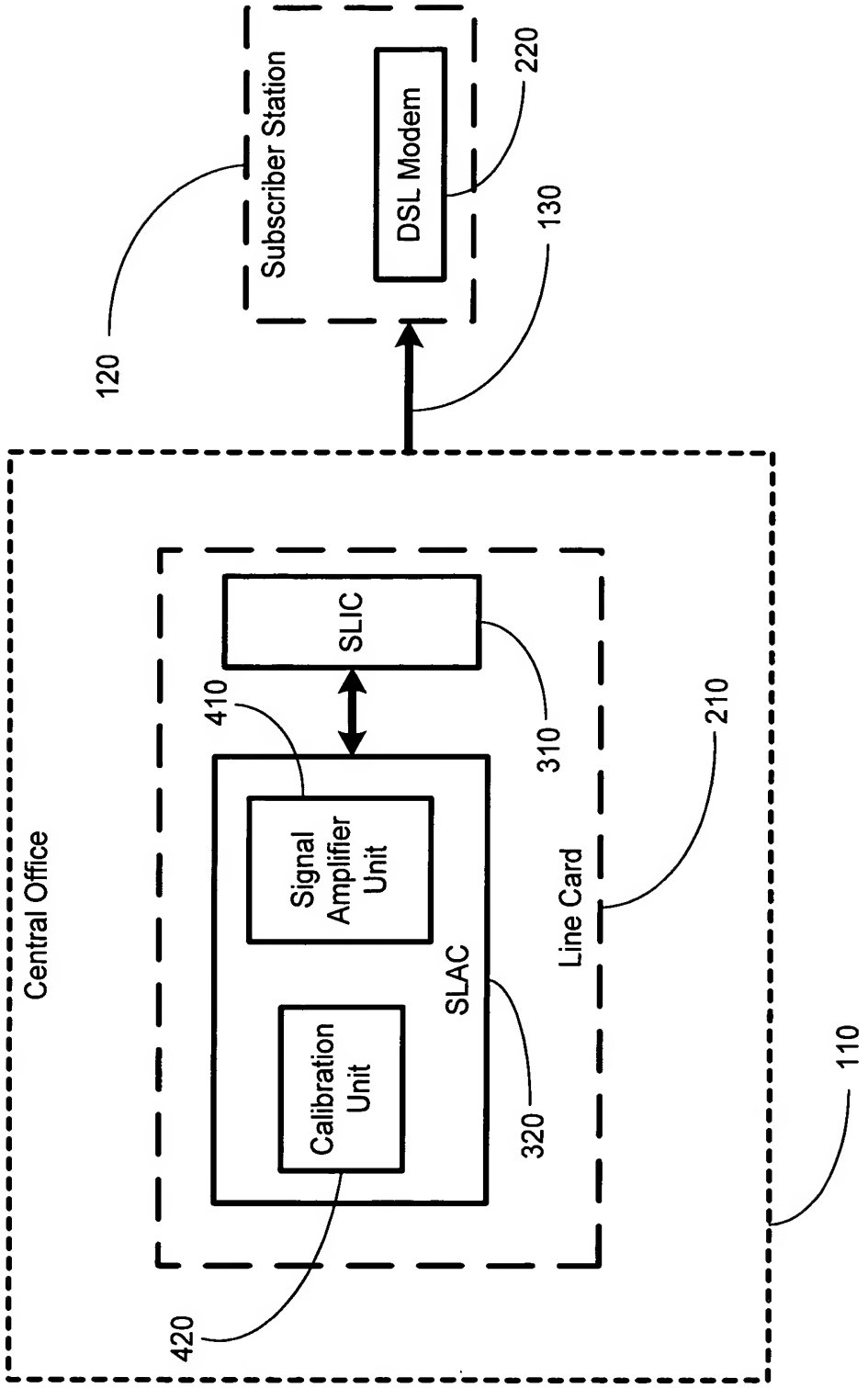
Subscriber Station
DSL Modem
220
130
120
Central Office
SLIC
410
310
210
Signal Amplifier Unit
Line Card
SLAC
Calibration Unit
320
420
110

FIGURE 4

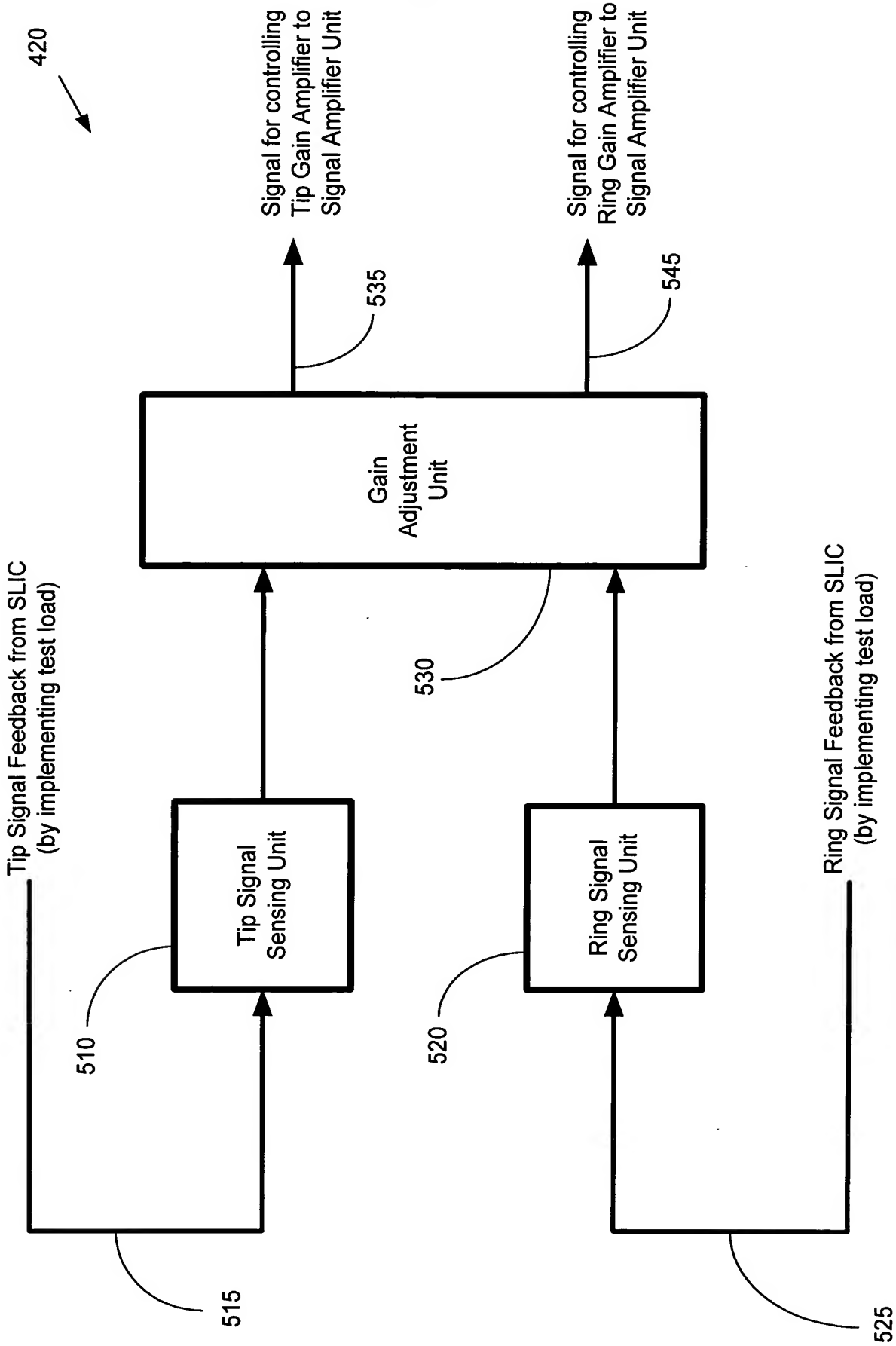
420
Signal for controlling Tip Gain Amplifier to Signal Amplifier Unit
535
Signal for controlling Ring Gain Amplifier to Signal Amplifier Unit
545
Gain Adjustment Unit
530
Tip Signal Feedback from SLIC (by implementing test load)
Tip Signal Sensing Unit
510
515
Ring Signal Feedback from SLIC (by implementing test load)
Ring Signal Sensing Unit
520
525

FIGURE 5

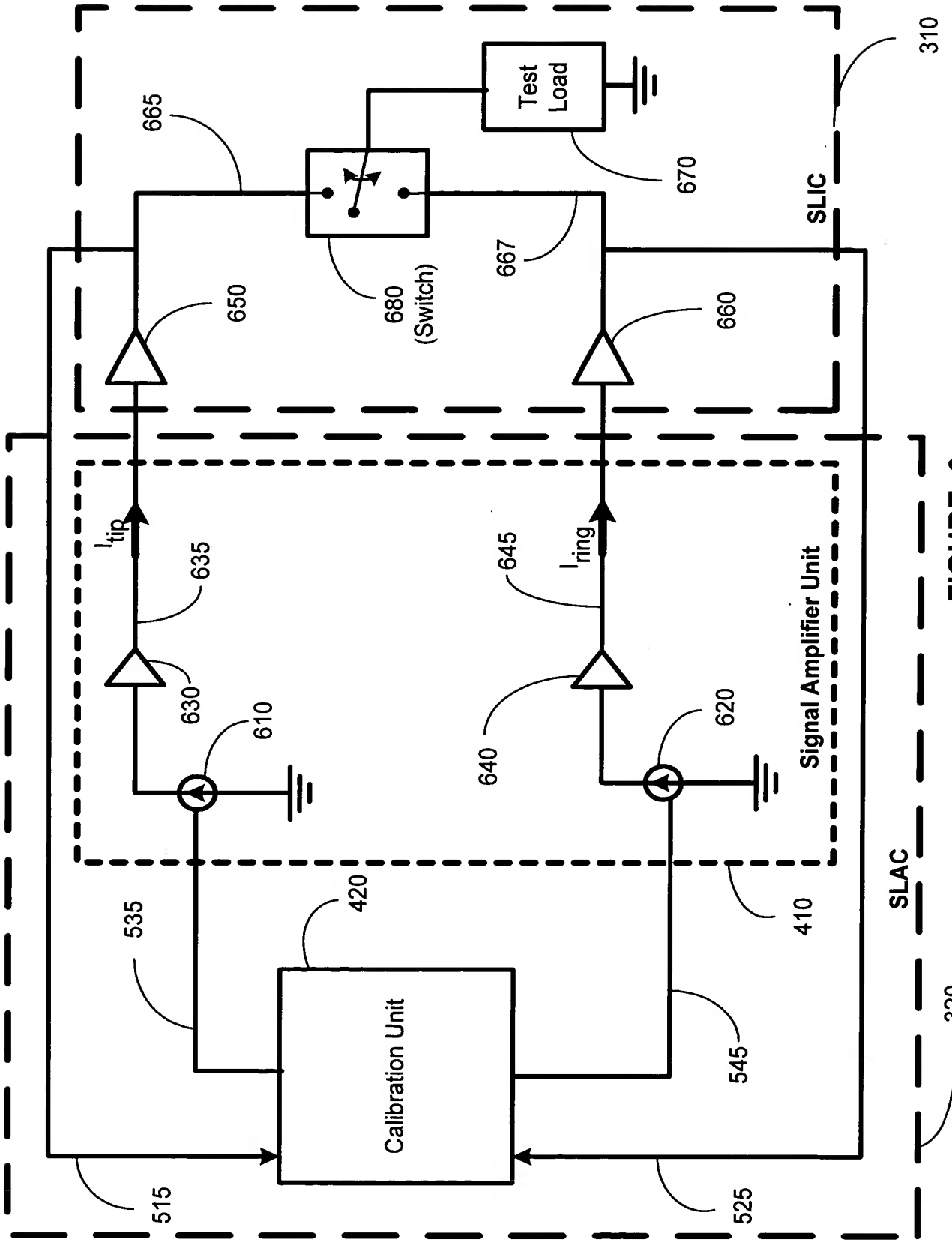
310
SLIC
665
Test Load
670
667
680 (Switch)
650
660
$I_{tip}$
635
645
$I_{ring}$
630
610
640
620
Signal Amplifier Unit
410
SLAC
535
420
Calibration Unit
545
320
515
525

FIGURE 6

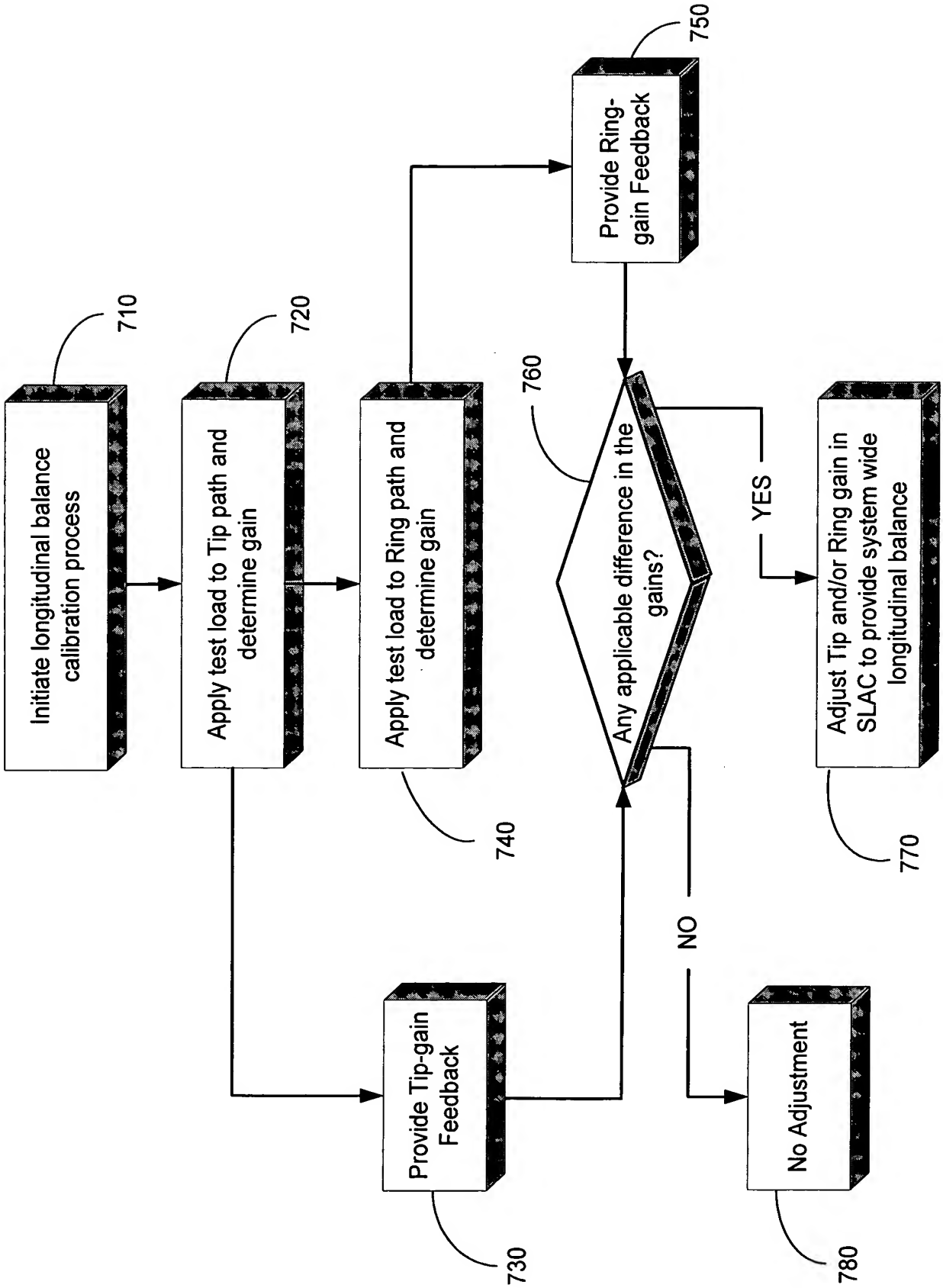
Initiate longitudinal balance calibration process
710
Apply test load to Tip path and determine gain
720
Apply test load to Ring path and determine gain
740
Provide Ring-gain Feedback
750
Any applicable difference in the gains?
760
YES
NO
Adjust Tip and/or Ring gain in SLAC to provide system wide longitudinal balance
770
Provide Tip-gain Feedback
730
No Adjustment
780

FIGURE 7